

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P562387

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562387  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-1STD-40-UNV-82-85-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

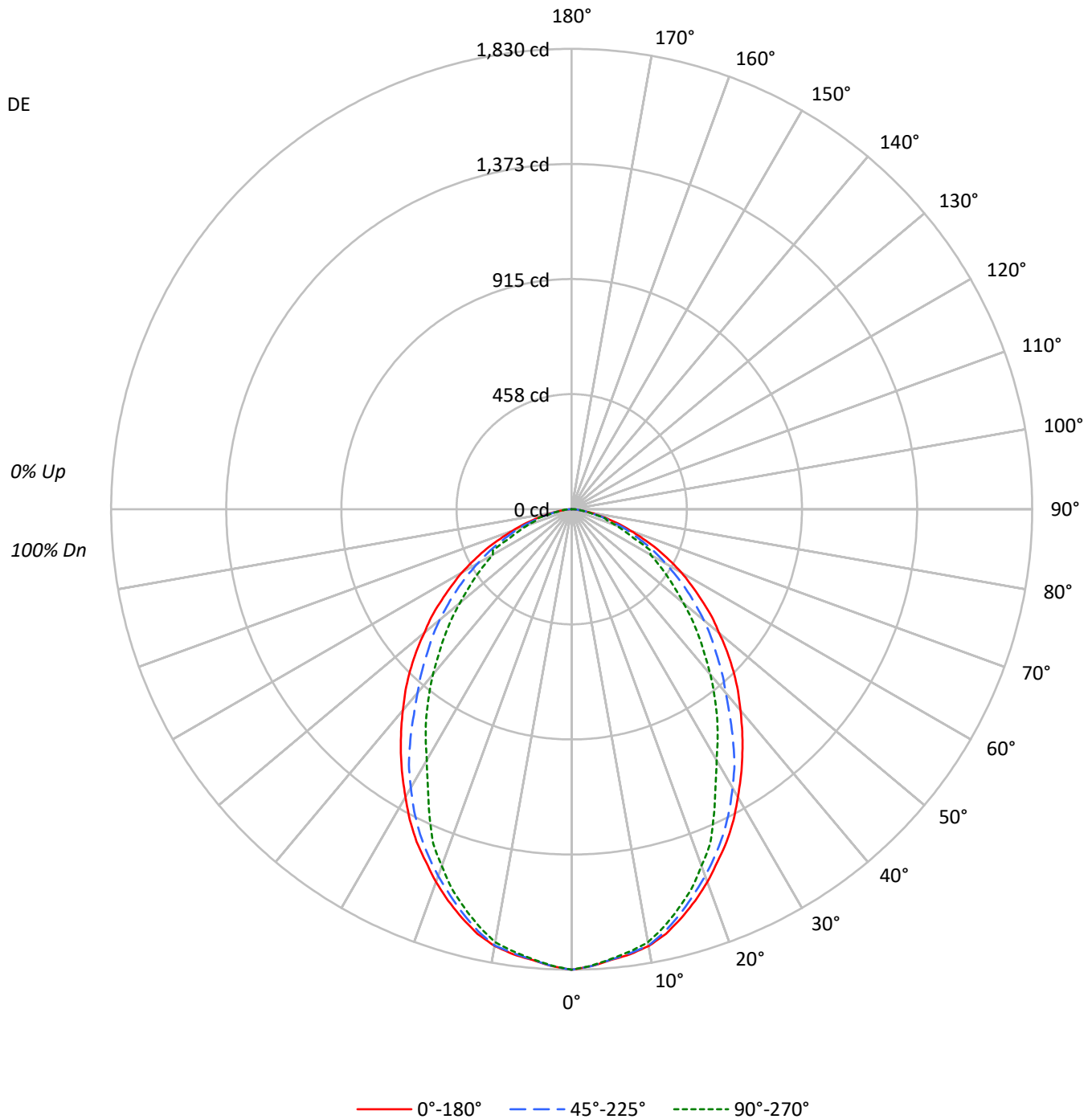
Lumens per Lamp: N/A  
Luminaire Lumens: 3593.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89					87				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2463	2463	2463
5°	2429	2426	2423
10°	2408	2405	2388
15°	2343	2320	2287
20°	2257	2221	2160
25°	2164	2117	1985
30°	2051	1986	1788
35°	1943	1835	1654
40°	1832	1672	1505
45°	1727	1546	1361
50°	1599	1435	1213
55°	1479	1301	1087
60°	1355	1161	974
65°	1192	1017	862
70°	982	891	733
75°	781	682	715
80°	525	492	459
85°	327	392	457

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1727 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.4	4.7
10°-20°	467.6	13.0
20°-30°	647.3	18.0
30°-40°	690.2	19.2
40°-50°	629.7	17.5
50°-60°	493.3	13.7
60°-70°	321.5	8.9
70°-80°	142.4	4.0
80°-90°	30.6	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1285.2	35.8
0°-40°	1975.5	55.0
0°-60°	3098.5	86.2
0°-90°	3593.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3593.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1830	1830	1830	1830	1830	
5°	1798	1796	1796	1794	1794	171
15°	1682	1682	1665	1648	1642	473
25°	1458	1449	1426	1375	1337	669
35°	1183	1174	1117	1032	1007	739
45°	908	889	812	745	715	699
55°	630	612	554	489	463	566
65°	374	353	320	326	271	369
75°	150	140	131	125	138	161
85°	21	23	25	28	30	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1830.2	1830.2	1830.2	1830.2	1830.2
2.5°	1817.5	1817.5	1817.5	1815.4	1815.4
5°	1798.5	1796.4	1796.4	1794.3	1794.3
7.5°	1783.7	1781.6	1779.4	1777.3	1773.1
10°	1762.5	1762.5	1760.4	1749.8	1747.7
12.5°	1728.7	1726.5	1718.1	1703.3	1699.0
15°	1682.1	1682.1	1665.2	1648.3	1641.9
17.5°	1631.3	1629.2	1608.1	1591.1	1582.7
20°	1576.3	1572.1	1550.9	1523.4	1508.6
22.5°	1515.0	1515.0	1489.6	1453.6	1438.8
25°	1457.8	1449.4	1426.1	1375.3	1337.2
27.5°	1392.2	1379.5	1354.2	1282.2	1237.8
30°	1320.3	1314.0	1278.0	1184.9	1151.0
32.5°	1252.6	1242.0	1203.9	1106.6	1079.1
35°	1182.8	1174.3	1117.2	1032.5	1007.2
37.5°	1112.9	1102.4	1030.4	962.7	931.0
40°	1043.1	1030.4	952.1	890.8	856.9
42.5°	977.5	960.6	884.4	818.8	780.8
45°	907.7	888.7	812.5	744.8	715.2
47.5°	837.9	821.0	751.1	681.3	647.5
50°	763.8	749.0	685.5	615.7	579.7
52.5°	702.5	679.2	617.8	548.0	518.4
55°	630.5	611.5	554.4	488.8	463.4
57.5°	564.9	545.9	493.0	431.6	410.5
60°	503.6	476.1	431.6	378.7	361.8
62.5°	435.9	414.7	376.6	332.2	353.4
65°	374.5	353.4	319.5	325.8	270.8
67.5°	306.8	296.2	266.6	237.0	228.5
70°	249.7	237.0	226.4	194.7	186.2
72.5°	198.9	186.2	171.4	154.5	148.1
75°	150.2	139.6	131.2	124.8	137.5
77.5°	103.7	99.4	93.1	86.8	84.6
80°	67.7	65.6	63.5	61.4	59.2
82.5°	40.2	40.2	40.2	40.2	40.2
85°	21.2	23.3	25.4	27.5	29.6
87.5°	12.7	12.7	14.8	16.9	19.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)